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oil heaters or heating

Home
Comfort
with

Kleen-Heet



A BOOK *of* FACTS *for* HOME OWNERS

*A New Conception
of
Home Comfort*

by

BYRON K. EATON, B. SC. OF M. E.

MEMBER A. S. OF H. AND V. E.



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BY WINSLOW BOILER & ENGINEERING CO.

AUTOMATIC HEAT *Clean, Reliable and Economical*



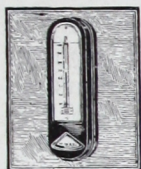
***V**IRTUALLY every big ocean liner, battle-ship and destroyer built since the war has been an oil-burner.*

Thousands of railroad locomotives of the most powerful types, today, use oil for fuel. Industries all over the country have adopted it. Thus oil has been proved by world's greatest heating authorities to have passed the experimental stage.

It is dependable, reliable, efficient and economical. It saves labor. It is cleaner. Today thousands and thousands of American homes are heated by oil.

The owners of these homes have a new conception of home-comfort . . . relief from the care of a coal furnace, greater cleanliness, and more regular, more healthful heat.

Oil Heat in the Home



Oil heat was born of necessity. Winter held many dreads beside the cold weather outside.

For years the country has had coal strikes and shortages. Coal prices in that time have doubled and tripled. Coal quality has reached new *low* levels. Coal without slag and slate, without clinkers, today is unheard of.

Then the ordeal of coal-delivery, to the careful mistress of a house!

Dirty wagons backing up, coal men tracking into the basement with bags, or sliding the coal into the bin with deafening noise. And after coal was delivered it usually meant soiled walls, soot on curtains and upholstery. A house to be cleaned over again.

But that was only the beginning. By cold weather usually the bin was full, and the winter was faced with a determination to see it through at all costs. Soon after the heating plant went into operation the soot again became noticeable. Some days the house was stifling hot—at other times, every room was chilled. *The bathroom was never warm in the morning.*

The family began to have colds and other winter ailments. Nobody knew that, taking every other precaution in the world, these were due to the irregularity and the uncertainty of house-warmth.

Then perhaps the furnace man failed to show up. A member of the family had to attend the furnace for a few days. Starting it off in the morning, coaxing it during the day and banking it up at night. Never daring to stay out late for fear the thing would die.

If the furnace did chance to die during the day the lady of the house, primly holding her dresses about her, battled with the shovel and fed the glowing maw of the furnace. While upstairs the children shivered

This sounds a lugubrious picture. Yet how true it was. And how necessary to remember, to get a true picture of the benefits of oil heating.

* * *

Today winter holds no dread for the thousands and thousands of families whose homes are heated this new automatic oil way.



*Now, no more cold
bathrooms*

A NEW CONCEPTION OF HOME COMFORT

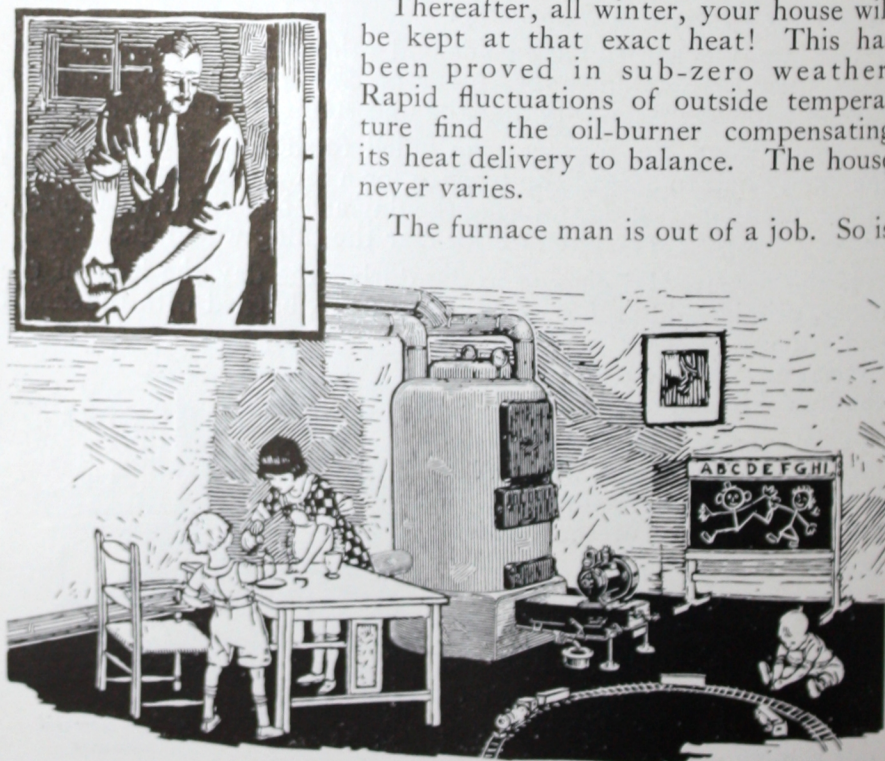
Begin with the installation of the oil-burner. It fits in your present heating plant. Skilled workmen put in the burner and fittings, install the tank and thermostat control, all in a remarkably short time.

Then a swift motor truck draws up at the curb. The oil is put in quickly, cleanly, without fuss. On most burner installations an outside hose connection is all that is needed. The truck pumps the oil through this hose, into the tank. No dust, no dirt—no noise or trampling of lawn and house. Then, ready for winter, await the first cold day. Usually early in the fall, there are a few chilly days which do not warrant starting the coal furnace, yet which make the house uncomfortable and unhealthy.

It's but a matter of seconds to start the oil-burner. For there is no fire to start or attend to. And when warmer days return, just turn it off—as easy as snapping off the electric light. When winter sets in in earnest set the thermostat in the living room. If you want the house kept at 70 degrees, set it there. Sixty-eight degrees is the temperature health authorities recommend. But if you want it warmer, simply set it at the temperature desired.

Thereafter, all winter, your house will be kept at that exact heat! This has been proved in sub-zero weather. Rapid fluctuations of outside temperature find the oil-burner compensating its heat delivery to balance. The house never varies.

The furnace man is out of a job. So is



A NEW CONCEPTION OF HOME COMFORT

the ashman. Your cellar doesn't need them any more. Think of the relief when one goes to the office in the morning. No fear that during the day the fire will die. The family, he knows, will be snug and warm all day.

Kleen-Heet has "found" the basement! Now, clean—with coal removed, and no ash receptacles, it makes a nursery or playroom for the children. Perhaps a laundry, with ample drying space for clothes. Or perhaps the man of the home has discovered it, and put a billiard table in. This former disgrace of the house is now a useful member of the family, giving additional space for many things impossible before. Light, clean and cheerful.

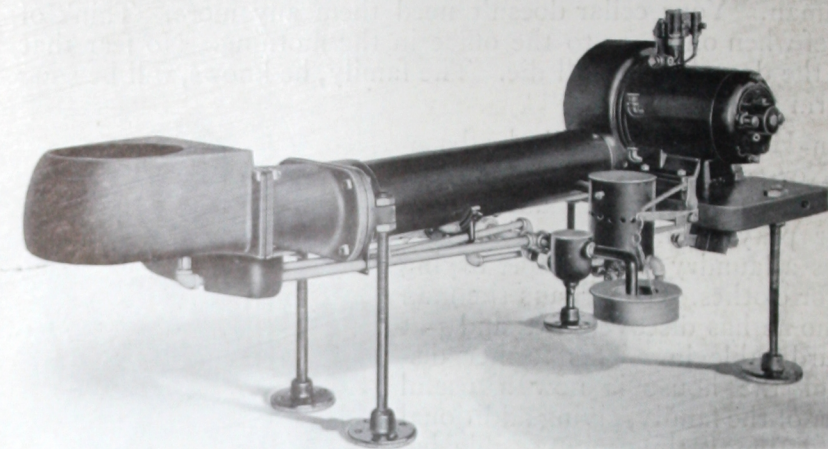


Thus has oil heat come into our lives. From coast to coast thousands and thousands of people will never go back to the old way again. Life is too short to depend upon an unreliable coal furnace. Heat is an absolute necessity. Today it is easily obtained.

If you have not as yet discovered oil heat get further particulars as applied to *your* home. Fill out and return the little questionnaire in the back of this booklet.

With that information we can tell you whether or not your heating plant can be adapted to oil heat; which Kleen-Heet is best adapted to your needs; the exact cost of that type and accurate installation costs. All the things you seek to know when considering oil heat for your home.

There is no obligation. Send it in now, before you forget.



A Few Words About Kleen-Heet

WE have told you about oil heating in the preceding pages. The things we say are based upon the experience of Kleen-Heet in thousands of homes and during five heating seasons.

Kleen-Heet is covered by more than 100 oil burner patents. It has many exclusive features found in no rival. It is made by one of the largest and oldest makers of automatic oil-burners in the world. Every installation of Kleen-Heet is covered by liberal guarantees.

Reliability By actual operation in the homes of many thousands of users, Kleen-Heet has proved its correctness of design, its simplicity and quietness of operation. Kleen-Heet has the simplest mechanism of any fully automatic oil burner made. Having fewer parts there are fewer things that could conceivably require attention.

Kleen-Heet has eliminated the drudgery of coal—the worry, expense, the constant attention that coal heating plants require. Kleen-Heet is not merely an oil-burning device, *it is a home-heating service.* And through its absolute dependability, its proved reliability—its guaranteed features—it has become the standard of the oil burning field.

Ease of Control The Kleen-Heet thermostat in the living room is all you need know about to assure constant, controlled heat to your family all through the winter.

A NEW CONCEPTION OF HOME COMFORT

This thermostat can be set for any temperature that you wish. Kleen-Heet does the rest—it is automatically controlled by the thermostat so that it maintains *that exact degree of heat*.

Thus when a cold snap comes, Kleen-Heet delivers the extra heat to counteract the outside temperature. And on warmer days, less heat being required, less heat is delivered, so that without waste, the same temperature indoors continues.

Should the warmth in the house exceed the temperature you have set, Kleen-Heet automatically stops and continues when the proper heat is again reached. It stabilizes itself automatically. It relieves you of all thinking. It assures the even, controlled heat which doctors say is necessary for good health during the trying winter months.

Why Women Like Kleen-Heet Women like oil heat for many reasons. Kleen-Heet, of all oil burners, has proved the most trustworthy, the most reliable. They have found Kleen-Heet fulfills all claims made for it. It is simple in operation, dependable under all conditions.

They appreciate Kleen-Heet when they see how easily oil is taken into the tank as compared with the trials of coal-delivery. They appreciate it when they see how much longer things are clean—curtains, hangings, wallpaper—without the soot and dirt of coal.

They like the extra space Kleen-Heet gives in the basement.

They like the freedom from the slavery to coal. From having an outsider come in to fix the fire and maintain the furnace. They are freed from dependence upon a janitor, an ash man.

They like the *economies* that these things effect.

But best of all they like a home which is cosy and warm at all times day and night. And the freedom from fear that the fire may go out while they are alone in the house.

When you put in Kleen-Heet, you simply buy heating service for life. And comfort and cleanliness in perpetuity.

*Oil Heat Has Supplanted Coal Just As
Electricity Replaced the Old
Style Lamp*

A Type and Price for Every Home

A KLEEN-HEET unit may be purchased precisely adapted to the heating demands of any size of home or building—no matter what they may be.

Kleen-Heet is made in a variety of styles and sizes to handle the smallest bungalow or the tallest skyscraper.

This is very important, for every home or building differs from others in its particular heating problem. There are inexpensive units for smaller homes—larger units to meet the requirements of larger homes, apartments, hotels and other buildings.

We offer a wider range, to meet your specific needs, than any other oil-burner company. We offer the exact size required for *your* home—rather than "the closest thing to it."

The company behind Kleen-Heet is one of the oldest and largest manufacturers of automatic oil-burners. It is sound, financially—in business to stay. Consider the company you do business with when you buy an oil-burner. That is a most important consideration.

Electric Ignition

FOR homes that are not equipped with gas the Kleen-Heet engineers have developed an *electric ignition* which takes the place of gas.

It is a reliable, simple device, contained in a removable drawer.

It consists of a small Bosch magneto which transmits an electric spark to a point approximately six inches back of the fire pot.

Air from the pump and oil meet at this point and a small primary fire is immediately created. Then the main supply of oil starts and the furnace begins to heat the house.

In other principles this electric ignition oil heater is similar to other Kleen-Heets, and is guaranteed to give just as satisfactory a service.

The Oil You Use with Kleen-Heet

THE oil used in Kleen-Heet is a type with which few are familiar who do not own oil-burners. It is an oil of low viscosity, because it is used for *burning* rather than for *lubrication*.

Kleen-Heet is designed to burn a straight run, clear colored oil with a minimum gravity of 36° Baume and a maximum flash point of 185°. Such oils are sold under various trade names in different centers and must not be confused with "fuel oil" that is suitable only for well engineered industrial plants with pre-heating equipment to insure fluidity and proper combustion in cold weather.

* * *

All oils are carefully graded to governmental standards. This is a great protection to you. The above described oils are the cheapest oils obtainable that are always uniform in quality, free from sediment and free-flowing in cold weather.

No way has ever been found to standardize coal commercially. Hence while paying top prices for coal, your bin may contain a dead loss in quantities of non-inflammable slag, slate and clinkers which reduce the efficiency of coal still lower than it is.



*If the cleanliness feature
were the only point in
favor of oil over coal,
that alone would be suffi-
cient with most people to
justify the change*

Compare Filling an Oil Tank With Filling a Coal Bin

HOW people dread the day when the coal-wagons come! A thin black blanket covers walls and chairs and tables. Windows need washing afterward. Curtains are simply ruined. Upholstery gets its share. Everyone knows the coal man has been there that day—and for days afterward.

If the coal is delivered down a chute during the day, into the basement, the noise is terrific. If by bag, the annoyance is unnecessarily great. Any way that coal is delivered it is very trying to temper. Fastidious housewives shrink from the thought of it!



Coal is dirty

With Oil—How Different

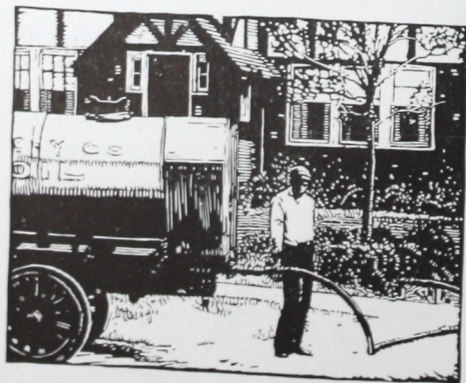
But when the Kleen-Heet tank needs refilling, how simple it is! A swift motor truck glides up to the house. The driver gets down, attaches a hose connection to the inconspicuous fill pipe.

The oil is pumped in very rapidly.

In a few minutes it's all done.

Or with some smaller types the oil is handled in covered cans by hand. But under any conditions this liquid-fuel is clean. The time taken is very short—you need never know the tank has been re-fueled as far as domestic arrangements are concerned.

Another spike in the coffin of Coal.



Oil is clean

The Cost of Maintaining A Kleen-Heet Burner

IT can be estimated that a Kleen-Heet burner will consume the equivalent in oil, to the hard coal the previous heating plant used. Many owners however find it more economical.

However, remember that with Kleen-Heet there is no furnace man, no cost of ash-removal. This means an average saving of from ten to twenty dollars a month.

And with Kleen-Heet there is no need for frequent redecorating and cleaning. For it banishes the soot and dirt of coal. *Oil heat is clean heat!*



There are thousands of Kleen-Heets in use in your type of home today. Many for as long as 5 years. Their owners will tell you their experiences. Some live near enough for you to talk to. Most sales are made through present users; one enthusiastic user telling another.

Silence

***K**LEEN-HEET is electrically operated. It is the most silent oil-burner on the market.*

Many oil-burners make considerable noise, and this is annoying. One reason for noise is inefficiency of the appliance itself.

Another reason is this: no maker of oil-burners has the wide range of styles that Kleen-Heet has. Hence they install "the nearest thing" that they have to what you need.

This requires speeding up the motor in some cases, slowing it down in many. And this extra adjustment of the motor means loss of efficiency—means noise, greater expense and quicker depreciation.

EVERY FEATURE OF KLEEN-HEET
IS GUARANTEED.

It is made by one of the oldest and largest makers of automatic oil burners in the world.

10 Reasons to Buy Kleen-Heet

- 1 The *Kleen-Heet Automatic Oil-Burner* eliminates the labor and bother you have with coal. No more heaving ton after ton of heavy, dirty coal into the mouth of the furnace—shaking down grates—scraping out clinkers—removing dusty ashes—building new fires—watching the fire day and night.
If a janitor has done this for you, Kleen-Heet saves many dollars yearly by making janitor service unnecessary.
- 2 Kleen-Heet is absolutely automatic. No matter when you wake in the morning—or when you come home at night—the house is always warm, in cold weather. The thermostat insures this steady temperature—through all changes of weather.
- 3 Thus a Kleen-Heet home is a comfortable home—24 hours a day, every day. The temperature does not vary one degree over or under the warmth you desire, all winter.
- 4 Any physician will tell you that the *even* warmth which Kleen-Heet gives is the first requisite to good health. Heat from a coal fire is amazingly irregular—frequently overheating or chilling the home—causing colds, and ill health. Merely changing dampers can not smother a lively coal fire nor revive a dying coal fire.
- 5 One of the advantages of Kleen-Heet is that it gives absolutely *clean, sootless*, heat. The interior of your home—walls, furniture, curtains—are not soiled with coal dirt as with coal fires. This also means a healthier home, and money saved on unnecessary house cleaning.
When a fresh supply of oil is delivered to your home no harm is done the lawn,—there is no dust, no noise, as when coal is shoveled in.
- 6 By eliminating coal and coal bins in the basement, Kleen-Heet saves valuable room that can be used for almost any purpose—a big, clean laundry, where clothes can be dried; a neat, healthy playroom for the children; a comfortable den, a billiard room, gymnasium; a clean work shop, a dance floor or an apartment.

7 The cost of fuel for Kleen-Heet in the average home throughout the season is usually comparable to the cost of hard coal. When you add to this the savings Kleen-Heet brings in cleaner's and decorator's bills, your time—or the janitor's time—in tending and laboring with coal fires, it is the most economical utility in your household. Add to this the comfort, ease of mind, and satisfaction Kleen-Heet owners enjoy and you have *one* of the important reasons why it has gained such vast popularity in almost every community and in homes of all sizes!

8 In coal-heated houses there is always the question of coal supply—which depends upon coal shortages, coal strikes. And uncertain heat due to the doubtful quality of this coal.

Authorities say that the world's *oil supply* is inexhaustible. As *oil quality* and efficiency are tested and graded by the government, you are assured uniformity of warmth at all times for the home.

9 Compare and test any other oil-burner with Kleen-Heet and you will find that this is the quietest plant yet developed—mainly because of its extreme simplicity. It has only one moving part: the electric motor pump-fan unit.

The main reason why ordinary, inefficient oil-burners are noisy and jarring to the nerves of the family, is because of their high speed motors, high air pressures, whirling discs, carburetors and other devices all absolutely eliminated in Kleen-Heet.

10 This simplicity has been carried so far in the Kleen-Heet Automatic Oil-Burner that its dependability—year after year—is unquestioned. Because it is absolutely automatic, you only need set the thermostat and keep the fuel tank filled—Kleen-Heet will do the rest.

Kleen-Heet is GUARANTEED to give boiler or furnace temperatures equal to coal fires. It is GUARANTEED for twelve months against imperfect materials or assemblage.

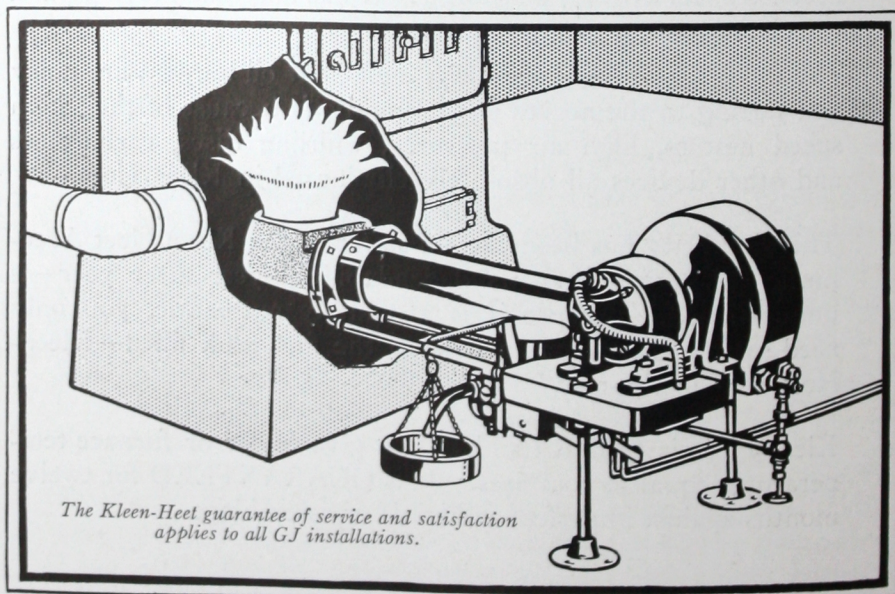
The Popular Priced Model GJ

IT was impossible to give all the many inherent points that have made our Type G Kleen-Heet the dominating burner.

Our engineers therefore faithfully retained the bulk of those many points but eliminated the vacuum tank and vacuum pump permitting the substitution of basement service tanks for the oil feed.

This elimination does not in any way affect the automatic regulation, the perfect bunsen gas pilot, the efficiency, safety and simplicity of our vaporizing method of combustion, the perfection of combustion also attained through the use of our scientifically constructed fire pot nor the quietness, so outstanding a feature of all Kleen-Heets.

In two, or more, apartment buildings where different heating plants are desired for each flat, a separate GJ can easily be installed to furnish individual heat to each tenant. Thus each apartment can use only as much fuel as it requires. Two of these installations can be made at approximately the cost of one large sized oil-burner.



The Kleen-Heet guarantee of service and satisfaction applies to all GJ installations.

The Construction of Kleen-Heet Type G

COMBUSTION CHAMBER

In order to secure the highest degree of combustion, it is necessary to artificially *form* a mixture of the oil and air. As this cannot be done while the oil is in a liquid state, it is necessary to turn it into a vapor or gas before the mixture can be made. The amount of air and oil vapor must be in proper proportion, and the mixture of the two must be *thorough*.

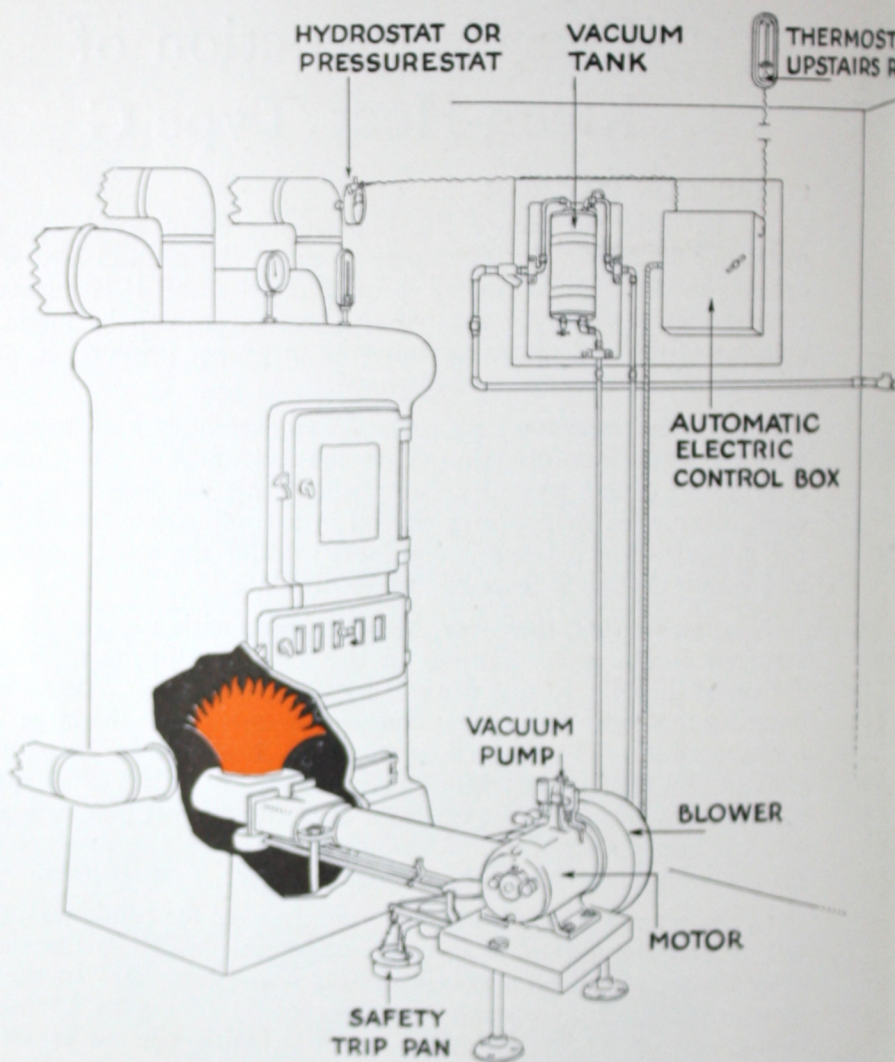
It is further necessary to maintain an extremely high temperature to get complete combustion (CO_2 instead of CO). The most successful and direct way of accomplishing this vaporization and thorough mixture is to vaporize the oil in a combustion chamber where the vaporization process is conducted under the most intense heat, and where carbon is least apt to accumulate.

This burner has, therefore, been designed with a scientifically constructed combustion chamber in the form of a fire pot. The oil is delivered directly to this fire pot by a $\frac{1}{4}$ -inch pipe. The oil supply, entering the combustion chamber as it does through the large $\frac{1}{4}$ -inch opening, will not be clogged or stopped. It should be borne in mind that the oil must flow freely and continuously in the exact quantity for which it has been set in order that the perfect proportion of oil and air remain constant. Our method insures absolutely constant proportions, and, therefore, *the highest degree of combustion*.

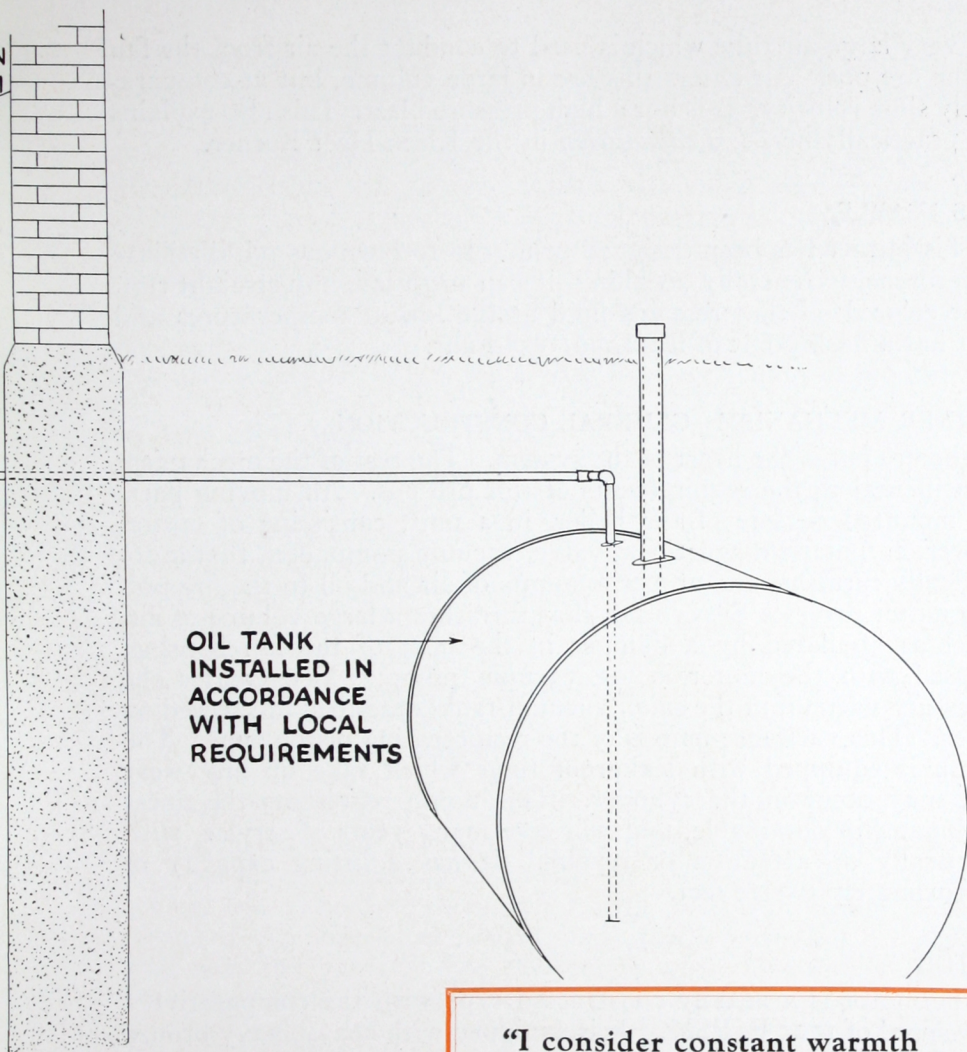
In the standard size burner commonly used for residences, the fire pot is constructed of a special cast metal, which withstands the temperatures used as a maximum for home heating. In the larger sizes, ranging from outside diameter of 12 inches to 20 inches, a lining of special fire-resisting material, with silicon as its basic element, is used. These larger pots resemble and have the quality of the highest grade crucibles.

VAPORIZATION AND IGNITION

As the oil enters the combustion chamber it drips from the pipe onto the vaporizing plate below. A gas pilot light keeps this plate hot enough to vaporize the oil and also ignites the oil and oil vapors thus formed. The pilot light is so protected by the vaporizing plate that there is no tendency to extinguish the pilot with the first rush of air that enters the fire pot when the burner starts. Another feature that eliminates any tendency to extinguish the pilot light is



A Kleen-Heet installation, showing how it fits into the present heating plant; the fire pot in place; arrangement of tank; the safety devices; automatic electric control box; vacuum tank and connection to the thermostat in upstairs room.



**"I consider constant warmth
in the home to be absolutely
necessary to good health"**

—says a leading doctor

"It is surprising how many winter ailments are traceable to irregular heat in the home. Cold rooms one day, hot rooms the next—a standard degree of warmth rarely ever. That is why I approve oil heat. From my observation, it is more reliable than coal. Homes are kept constantly at one fixed temperature. Oil-heated homes are, as a rule, healthier homes. I advocate that the home be kept at 68° Fahrenheit. This can be done easily with a good oil burner. I unhesitatingly recommend oil heat."

Thousands of doctors say the same thing

A NEW CONCEPTION OF HOME COMFORT

the very large air tube which is used to conduct the air from the fan to the fire pot. Air enters this fire in large volume, but at comparatively slow velocity. It is not a high pressure blast. This also explains the practically *noiseless combustion* in the Kleen-Heet Burner.

OILS USABLE

This burner has been designed primarily to burn gas oil, distillate or kerosene. Generally speaking, it can negotiate any straight run, clear colored oil that remains fluid at the lowest temperatures and that has a flash point of less than 185° Fahr.

BURNER MECHANISM—GENERAL CONSTRUCTION

The fire pot is the heart of the system. The rest of the mechanism is incidental to the requirements of this fire pot. All moving parts are mounted outside of the boiler, in a unit, consisting of motor, blower, automatic magnetic oil valve, vacuum pump, etc., that automatically furnishes the proper amounts of air and oil to the fire pot. The motor drives a Sirocco fan that furnishes a large volume of air, which is regulated by a damper in the inlet of the fan housing. Housed with the motor is the vacuum pump, which creates the necessary vacuum in the small vacuum tank, described in succeeding pages. This vacuum pump is of the reciprocating piston type. The piston is equipped with leakproof rings which take up any wear that may occur in the cylinder. This pump represents the finest workmanship obtainable, and will give many years of service, with practically no attention or repairs. It has a lifting capacity of approximately twelve feet.

MOTOR

The motor is a heavily constructed type with the comparatively slow speed of 1725 R. P. M. It is equipped with heavy, navy bronze bearings. This motor should give many years of service without appreciable attention or repairs.

AUTOMATIC MAGNETIC OIL VALVE

An unique feature of this system is the patented automatic magnetic valve for oil control. The valve proper is of the blunt needle type, ground into its seat to a perfect fit. The valve stem is attached to a cast iron disk. A powerful air-cooled magnet, placed above and outside of the valve chamber, lifts the disk against gravity and opens the valve whenever current is passed through its coils. The magnet and motor are connected in multiple and when the thermo-

stat closes the relay switch, the motor starts and the magnet immediately "picks up" the disk and valve needle, opening the oil supply from the vacuum tank to the combustion chamber. It should be noted that the valve is *normally closed*. If the circuit is broken or the current shut off for any reason, the valve needle drops into place, and the oil is positively shut off, making it impossible for oil to enter the combustion chamber. If such a thing were possible as the failure of this valve to close, the only oil that would drain into the combustion chamber would be the contents of the vacuum tank, approximately one pint. This automatic valve, except for the cast iron disk attached to the needle, is of the best quality of bronze.

SAFETY FEATURE

While the construction of the automatic valve affords almost perfect protection, there is an additional safety device which consists of two separate drain pipes from back of the fire pot to a brass cup suspended from a trigger arm, so arranged that if oil should enter the fire pot and fail to be consumed, the excess oil would drain into this cup, and the weight of a few ounces would cause the trigger to be released and to shut off the motor and oil valve. *Kleen-Heet has been listed as standard by the Underwriters' Laboratories, by the Board of Standards and Appeals of New York City and by the Department of Public Safety of Massachusetts.*

AUTOMATIC ELECTRIC CONTROL THERMOSTAT

The thermostatic system employed for automatic control consists of a standard thermostat mounted on a wall in one of the living rooms, and a standard relay switch with small transformer, which is mounted in a sheet-steel cabinet, and usually located on a basement wall near the burner. The thermostat is of the two-circuit, three wire type with platinum contact points and convenient terminal binding posts. It has a range of approximately 50 to 90 degrees Fahrenheit. A small lever and indicator enable the owner to set the thermostat to any temperature desired.

AUTOMATIC SWITCH

The relay switch is mounted on an insulated base, and enclosed in a sheet steel fireproof box with the transformer. The purpose of the transformer is to "step down" the voltage from the standard lighting or power circuit to approximately 9 volts. This low voltage makes possible the use of ordinary braided telephone wire on the circuit running to the thermostat. The relay is of the common magnetic type, not relying upon any springs to make or break contacts. It is a simple mechanism with no moving parts except the

A NEW CONCEPTION OF HOME COMFORT

armature with its extended contacts, making a slight stroke of about one-half of an inch whenever the thermostat circuit is opened or closed.

The foregoing paragraphs under the heading "Automatic Electric Control" apply to *Alternating* current, as that is the prevailing current. In the case of *Direct* current, the same type of control is used except that a dry battery is required for the thermostatic circuit instead of the transformer.

VACUUM FEED VACUUM TANK

One of the many advantages is the vacuum system of oil feed. A standard vacuum tank is used. It is mounted upon a wall of the basement, five or six feet above the fire pot level. This tank furnishes a non-syphoning break between the main fuel reservoir and the burner, and keeps a small supply of oil in reserve for delivery to the burner. The oil being maintained at a fixed level in this vacuum tank, insures a constant head pressure on the oil running directly through the automatic valve into the combustion chamber. This is important in order to maintain perfect proportions of air and oil, and good combustion.

OIL STRAINER

A strainer with a large surface of very finely meshed screen in the shape of a cylinder, on the outside of which is filtered any dirt that may be suspended in the oil, is used between the main storage tank and the vacuum tank. The screen can be very easily taken out of the strainer and cleaned, if necessary. Since the oil is taken from the main fuel reservoir by a suction pipe, entering at the top of the tank, and extending down to within an inch or two of the bottom of the tank, there is little tendency of sediment being carried up into the oil line. If any sediment should be carried out of the storage tank, it would be effectively stopped by this strainer.

OIL CONSUMPTION—COMPARISON WITH COAL

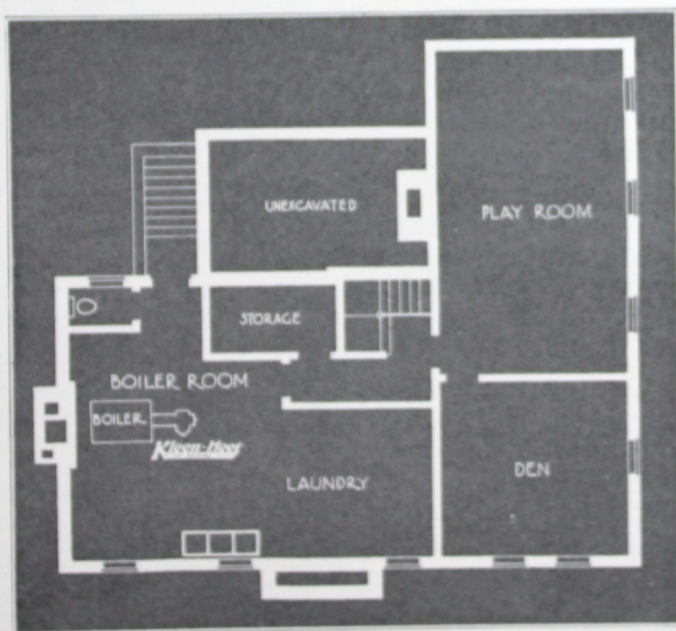
We are often asked the question: "What will be the oil consumption?" This is something that cannot be positively determined, nor can a very accurate comparison be made with coal. Most of the oil consumption factors are entirely beyond the control of the oil burner; weather conditions, as to wind, temperature and humidity, window construction, exposures, adaptability of the heating plant to oil burning, the temperatures maintained in the home, the efficiency of the boiler, the protection of mains and risers against heat losses, the disposition of the people who live in the home, and of the persons who care for the furnace, all have a decided effect upon fuel consumption.

A NEW CONCEPTION OF HOME COMFORT

Many homes that were persistently underheated when coal was used are kept at a steady, proper and adequate temperature with the intenser heat of the oil fire. An extra allowance for fuel expenditure must be made in such cases.

Hundreds of our users report fuel saving, while some advise that their fuel bills are larger, but these invariably add that they wouldn't be without the burner even if the fuel cost were double.

The investigator of oil-burning equipment should note that while it is possible that his fuel bill may be larger, yet there are many potent reasons why such a burner should be installed. There will be less frequent redecorating and cleaning of the home and its furnishings. The worry and labor incidental to coal and ash handling will be entirely eliminated. The hitherto useless basement can be transformed into a habitable and useful portion of the home. Uniform temperatures will be attained. The fuel supply can be entirely removed from the home. The bugaboo of the annual coal miner's strike, means nothing to the user of an oil burner, except increased satisfaction.



A typical cellar plan showing Kleen-Heet installation, and additional basement space available with an oil heating plant

Here are the Answers to All Your Questions

Q. Is it necessary to have an oil tank in basement?

A. No. The oil tank is usually placed underground, outside the house.

Q. Do you supply the oil tank?

A. Yes. Or you can put in your own.

Q. How much will you charge me for a tank?

A. This depends upon the size desired. Prices range from \$60 upwards, *completely installed*.

Q. Will I be assured of prompt delivery of oil?

A. Yes. The oil companies pride themselves upon their oil delivery service.

Q. Will my home be without heat while Kleen-Heet is being installed?

A. No. Practically all of the work will have been done before your coal fire is extinguished. Only about two hours is needed to make the final changes.

Q. How many days does it take to completely install Kleen-Heet?

A. Generally, Kleen-Heet is installed in two days' time.

Q. How many gallons of oil does it take to equal the heating power of a ton of coal?

A. One should figure approximately 150 gallons of oil as equal to one ton of hard coal.

Q. Why is Kleen-Heet so noiseless compared with other oil burners?

A. Because of the very large air tube used to conduct the air from the fan to the firepot. Air enters this fire-pot in large volume, but at comparatively slow speed. *It is not a high pressure blast.*

Q. What kind of oil is used in a Kleen-Heet burner?

A. It has been designed primarily to burn distillate, or gas oil.

Q. What is the cost of oil as compared with coal?

A. Did you ever go to a coal man and ask him to guarantee the number of tons of coal you will burn in a season? He doesn't know—neither does the oil-burner man.

Here is an approximate idea, though, of what you will burn. If you burn hard coal, you will use about 150 gallons of oil to each ton of coal. If you burn soft coal, it will be around 125, depending upon the grade of coal you have been using.

Another way to estimate the consumption is by taking the actual radiation and if it is hot water, experience has taught us you will burn approximately 3 gallons of oil per square foot of radiation per season.

If it is steam, you will burn approximately 5 gallons of oil per square foot of radiation load per season. The hardest job we have is getting figures on the cost of operation from our users. Out of thousands of letters sent out, we received less than 10% replies, the answer invariably was that they don't know.

A NEW CONCEPTION OF HOME COMFORT

In the immense satisfaction and greater comfort that the Kleen-Heet user enjoys, he invariably forgot about his fuel bill. But if it were out of proportion, we would certainly hear of it for there are thousands of Kleen-Heet users in all classes of homes with all types of boilers. There are hundreds of burners being installed all the time and if the cost of operation were not satisfactory, our users would not sell their friends the way they do. The biggest percentage of our new business comes from satisfied users who have boosted Kleen-Heet to their friends.

Q. After you get a large number of oil burners installed, won't the price of oil go out of proportion?

A. The oil that we use is a by-product of the production of gasoline, and as the demand for gasoline increases, the quantity of the by-products correspondingly increase, and as methods of obtaining gasoline are improved, so will the methods of obtaining these by-products improve.

In addition to this situation, we're just scratching the oil fields of America. Years ago a pessimistic oil producer in Pennsylvania agreed to drink all the oil that would ever be produced outside of the state of Pennsylvania, since which time there have been tremendous developments in Kentucky, Kansas, Oklahoma, Texas, and California.

Now that diplomatic relations have been resumed with Mexico, we have the benefit of the Mexican wells which are astonishingly productive. The shale oil fields of the West and the oil fields of Canada have not even been touched. Montana fields are just coming in.

Q. What is the cost of gas for the pilot light?

A. When the burner is installed, the adjustment is made by one of our engineers, who sets the pilot light to burn one cubic foot of gas every 20

minutes. This is sufficient under ordinary circumstances. There are a few cases where gas pressure is not constant that require higher adjustment.

Q. What is the cost of electricity?

A. The machine, when operating, consumes 200 watts per hour. The average running time throughout the season is 6 hours per day.

Q. Do you guarantee Kleen-Heet?

A. Yes. The Kleen-Heet Burner and other equipment furnished is guaranteed to be free from defects in material and workmanship for a period of one year after date of installation.

Q. Who is the Company behind Kleen-Heet?

A. Kleen-Heet is manufactured and sold by the Winslow Boiler & Engineering Company of Chicago. It is one of the oldest and most responsible companies building automatic oil burners today.

Q. Is the Company that manufactures Kleen-Heet reliable?

A. The Winslow Boiler & Engineering Company is the biggest company of its kind in the world.

Q. Are Kleen-Heet burners safe to operate?

A. Yes. They are listed as standard by the Underwriters' Laboratories and the Massachusetts Department of Public Safety and by the Board of Standards and Appeals of New York City.

Q. What would happen if the electricity were cut off?

A. The majority of incidents when this occurs is during electrical storms in the Summer. However, there are a few cases when it does occur during the winter. There have been very few cases where the current has been off for more than an hour or two at a time.

A NEW CONCEPTION OF HOME COMFORT

If it should happen, you can flow oil in the fire-pot using the natural draft for air, operating the same as the gravity burner operates.

Q. What effect will Kleen-Heet have on my insurance?

A. No effect at all. The burner is listed as standard by Underwriters' Laboratories.

Q. I understand that with many oil burners I have to pump oil from a supply tank into a smaller tank in the basement. Is this necessary with Kleen-Heet?

A. No. Kleen-Heet is completely automatic. It pumps its oil from a tank located underground outside the house except in type GJ.

Q. How does Kleen-Heet do this?

A. By means of a vacuum feed, having a Stewart vacuum tank similar to the one in your car.

Q. Will the oil feeds become clogged?

A. No. Kleen-Heet is equipped with oil strainers and all oil feeds are through $\frac{1}{4}$ " pipe.

Q. How does Kleen-Heet compare with other oil burners?

A. Kleen-Heet is unexcelled by any oil burner used for home heating purposes. Many of those who have installed Kleen-Heet have done so only after careful comparisons. Its dependability has been proved through years of use.

Q. How long will the burner last?

A. We have had thousands of burners installed during the last 5 years. The burners that were installed 5 years ago are giving as good service today as when first installed.

The most vulnerable part of the equipment is the motor. Everyone knows that the motor properly lubricated will last for a period of 20 years.

Q. How long will the combustion chamber last?

A. Under ordinary conditions the combustion chamber should last from 5 to 10 years. As you know it is necessary for all oil-burners to have some sort of a combustion chamber within the burner. In industrial work it is built with fire-brick, and built according to the size of the burner. Kleen-Heet's combustion chamber is scientifically constructed according to the size of the burner, and it is an admitted fact that a high-grade alloy such as used in the Kleen-Heet burner will last infinitely longer than a combustion chamber of fire-brick construction.

Another advantage of the Kleen-Heet combustion chamber is that if anything should happen to it, no damage is done as the oil simply drains back to the overflow. Where you have the fire-brick construction with a straight shot flame against it, there is always the possibility when the bricks crumble, of the flame impinging against the boiler plate which, of course, would crack the section.

Q. How long has Kleen-Heet been successfully serving home owners?

A. Five years.

Q. What do you mean by service?

A. Service means that if at any time after installation your burner requires attention, we are prepared to give you that attention. We realize that heat is the most important part of the home during the winter months, and we also realize that in many cases there is no one in the home except the lady, and she, sometimes, does not understand the simple rudiments of the burner. For this reason we are always ready to help you, and for this reason we maintain a 24-hour service every day.

What Kleen-Heet Users Say

*You can be just as satisfied and comfortable
as these home owners*

Gentlemen:

I have had the Kleen-Heet Automatic Oil Burner in my home all Winter and we have never had such comfort with a heating plant as we have had this season—we do not know we have one, it is so easily regulated and has proved so satisfactory.

The Kleen-Heet Automatic burner has proven such a success in my home that I do not hesitate to recommend it.

Very truly yours,

GEORGE BRANDEIS.

Omaha, Nebr.

Gentlemen:

I have had your Oil Burner installed at my house and same has been in operation now about three months. I want to say it is all I expected it to be and more. It is absolutely satisfactory in every way and I have never had a moment's trouble with it. It gives an even heat without the least bit of worry or trouble.

I can cheerfully recommend this burner to anyone who contemplates installing oil heat, or any other kind of heat. It is the simplest and easiest method of heating a house and certainly the cleanest, and certainly the least trouble of any system I know of.

Yours truly,

R. SONDHEIMER.

Memphis, Tenn.

"Up until January 20, 1923, I used 1,023 gallons of gas oil which is cheaper than if I burned coal and much more convenient. If this burner was the last one made and I couldn't get another one, I wouldn't sell it for the Masonic Temple."

FRANK G. OSTRANDER.

Chicago, Ill.

Gentlemen:

The Kleen-Heet burner in my home gave splendid results during the past few weeks when we had such bitter cold weather. It not only kept the house warm, but regulated itself perfectly.

During the nights we kept a thermometer in the main part of the house at about 50 degrees and during the day time, about 70 degrees.

It is needless to say I believe that any one that uses your burner will be just as pleased as I am.

Yours very truly,

HAROLD N. COOLEGE.

Atlanta, Ga.

"* * * During the cold season of 1923 and 1924 I used distillate oil in my homestead with a Kleen-Heet equipment. My season's expense for oil was \$454.51 as against approximately \$750 for coal the preceeding season.

"I use a thermostat which regulates the temperature, and the same furnace with hot water system, as I used with coal. I have a large house and by regulating the thermostat I can warm up my house in the morning in twenty minutes' time which formerly took from one to two hours to do with coal."

S. P. CROSBY.

St. Paul, Minn.

"We are pleased to inform you that the six plants you installed for us operated efficiently during the recent cold spells. We are well pleased with them and consider Kleen-Heet a valuable addition to the modern home."

P. VISSER.

River Forest, Ill.

A NEW CONCEPTION OF HOME COMFORT

Dear Sir:

I take this opportunity to thank you for the wonderful service extended to me by installing your Kleen-Heet Automatic Burner.

It is without doubt the most wonderful machine ever put on the market, and believe me I would not part with my burner for ten times its cost.

Just say that it is perfect.

Respectfully,

C. M. GARVEY.

Omaha, Neb.

Gentlemen: The Kleen-Heet which you installed in my home at 404 Jackson Avenue, River Forest, Illinois, last fall has proved very satisfactory, as it has kept our home comfortable during the past severe winter.

With the exception of slight adjustments which were necessary from time to time, I have had no trouble with it, and I want to compliment you on the efficient service which your company has rendered me during this time.

Wishing you success, I beg to remain

Very truly yours,

A. G. GULBRANSEN.

Chicago, Ill.

"On Sunday, January 5th, 1924, when the mercury was rapidly falling and the wind blowing a gale, naturally the house was hard to heat, but the faithful Kleen-Heet kept tugging at it and kept the house at 70 degrees all day. That night I set the thermostat at 55 degrees, which temperature was maintained throughout the night, although outside the mercury stood a fraction above zero. The plant is most satisfactory and a perfect wonder."

DR. THOMAS J. COLLIER.

Atlanta, Ga.

Gentlemen:

In reply to your inquiry of February 9th, 1923, as to how our Kleen-Heet functioned during the cold spell of the 3rd and 4th of February, when the mercury ranged from 8 to 15 degrees below zero, with a heavy north wind prevailing, I am, in good conscience, forced to report that our two-apartment was ideally comfortable. I can say the same for the later cold spell in the same month and, indeed, it gives me great pleasure to say to you that Kleen-Heet has given us unqualified satisfaction.

There have been, as you know, no breakdowns nor interruptions in service, of any kind.

Very truly yours,

FRANK L. KRIETE.

Evanston, Ill.

"I went to bed last night with the thermometer in the house at 72°, outside 30° below zero; got up this morning with the house thermometer 72°, outside 40° below zero. The atmosphere where your device is used is almost like a summer temperature, moist and agreeable, not dry and heavy as when coal is used."

J. WISSER.

Decorah, Iowa.

"I don't feel worn out this winter as I have other winters, and no shovelling of coal and ashes accounts for it. The beauty about Kleen-Heet is that one can take a month's trip or be sick in bed as long as you feel like it and forget all about the heating of the house and the hot water."

F. F. EHLERS, M.D., D.D.S.

Oak Park, Ill.

"I cannot praise your system too highly; it has been giving perfect satisfaction and I am well pleased that I had it installed."

ANTON J. CERMAK.

Chicago, Ill.

Gentlemen:

We cannot recommend too highly the eight No. 56 Kleen-Heet Automatic Oil Burners, installed by your company, in our heating plant. Our building was most satisfactorily heated all winter, both day and night, even during the coldest weather.

Yours respectfully,

SISTERS OF THE GOOD SHEPHERD.

Omaha, Nebr.

"During the coldest weather my house, which is a rather large one, has been held at a uniform temperature with no further thought or effort than setting the thermostat. It is impossible for the writer to imagine anyone having any regard for a uniformly comfortable temperature using any other kind of fuel."

W. L. BECKLEY.

Chicago, Ill.

Look for These Five Things *when you consider an oil-burner*

- 1 SIMPLICITY OF MECHANISM—Kleen-Heet has fewer parts than any other automatic oil-burner on the market. Nothing complicated to go wrong and cause annoyance. Women particularly appreciate this point. Kleen-Heet is entirely automatic.
- 2 PROVED PERFORMANCE—Kleen-Heet is not a theoretical type of burner being tested out at the expense of people who buy them. Kleen-Heet has proved its performance with thousands of users, under all conditions of use and weather.
- 3 INSTALLATION AND SERVICE—We are equipped to render the 100% service we guarantee our users at all times. You are doing business with a carefully selected distributor or a direct factory branch.
- 4 THE RIGHT BURNER FOR YOU—Kleen-Heet builds the widest range of burners in the market. Thus we have the exact type needed for your requirements. You do not get the "nearest thing we've got" to what you need. You get the exact installation adapted to your house.
- 5 THE COMPANY BEHIND IT—The Company behind Kleen-Heet is one of the oldest in the oil-burner industry. Solid, dependable, experienced, strongly financed.

The Safety of Kleen-Heet

KLEEN-HEET is listed as standard by the Underwriters' Laboratories.

To secure their approval Kleen-Heet was subjected to many practical tests over a long period of time.

This unprejudiced investigation proved that Kleen-Heet service was everything we have claimed it to be, and that it is a thoroughly safe home-heating appliance and in no way affects the fire insurance of the user.

There are 1500 different makes of oil burners on the market but only eleven automatic burners have been given a listing by the Underwriters' Laboratories.

The Department of Safety of Massachusetts and the Board of Standards and Appeals of New York City, have given Kleen-Heet their unqualified approval also.



Real Estate Men Say Houses Equipped With Kleen-Heet Make Easy Sales

"I find in selling a home," a prominent Chicago real estate man said recently, "that prospective buyers today look most critically at the heating-plant.

"Everything else being equal, I can state positively that a home equipped with Kleen-Heet will get the sale, as against one equipped with old-fashioned coal heat.

"It certainly increases the value of a house considerably if it is oil-equipped."

And So Say Hundreds of Representative
Real Estate Men Who Know

Mail this Questionnaire now for Specific Information regarding

Kleen-Heat

Automatic Oil Burning Systems

as adapted to your house

1. Name_____
2. Address_____
3. Type of building Frame ☐ Concrete ☐
 Stucco ☐ Brick ☐
4. Kind of Building House ☐ Apartment ☐
 Store ☐ Bungalow ☐
5. Weather Strips ☐ Storm Windows ☐
6. System of Heating? Hot Water ☐ Steam ☐ Vapor ☐ Hot Air ☐
7. Make of Boiler?_____
8. Number of Boiler?_____
9. Is Boiler Covered?_____
10. Are Mains Covered?_____
11. Size and Condition of Chimney?_____
12. Are There Other Connections in Same Chimney?_____
13. Kind of Coal Used?_____ 14. Amount Used Annually_____Tons
15. Have you been able to heat all rooms sufficiently in coldest weather with coal?_____

16. Total radiation (express in feet or number of radiator sections with sizes)_____

17. Current available_____volt, _____cycle, AC or DC?_____
18. Is gas available for pilot light?_____(Furnished with Gas Pilot or Electric Ignition)

Mail this questionnaire at once to

WINSLOW BOILER & ENGINEERING CO., 208 South La Salle Street, CHICAGO



